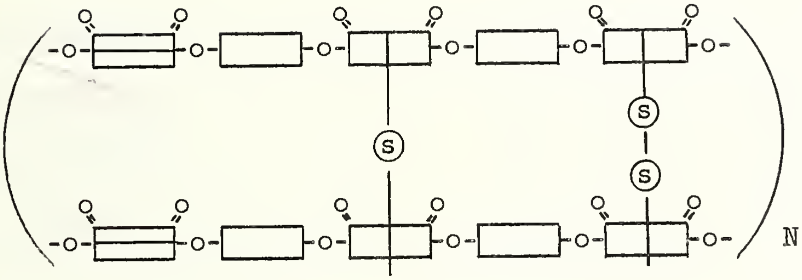
SUR-Lastics

A useful series of high quality resins made from gum rosin and styrene.

Research products of the

NAVAL STORES LABORATORY
Olustee, Florida[1]



⊟ Gum acids -β-propiolactone unit

◫ Fumaric acid unit

▭ Diethylene glycol unit

Ⓢ Styrene unit

An interesting series of inexpensive polyesters of rosin modified with beta-propiolactone having excellent properties can now be produced by industry. These unsaturated polyesters when copolymerized or crosslinked with styrene yield SUR-Lastics with unusual properties. Potential outlets for SUR-Lastics include their use as laminating, molding, casting and coating resins.

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[1] One of the laboratories of the Southern Utilization Research and Development Division, Agricultural Research Service, U.S. Department of Agriculture.

The clear unfilled castings possess excellent resistance to deterioration by water, 10 percent sodium hydroxide, 30 percent sulfuric acid, alcohol and toluene. Physical characteristics of the SUR-Lastics can be varied depending on the degree of esterification and the mole ratio of the reactants used.

Brookfield Viscosity Measurements:	May be altered from 430 to 9120 centipoises
Heat Distortion:	May range from 65 to 82°C.
Tensile Strength:	From 7910 to 9460 psi
Flexural Strength:	From 13 to 16.6 x 10^3 psi
SPI Gel Tests:	From 90 to 166 - 120°C. total seconds

The process for the preparation of SUR-Lastics consists of reacting gum rosin with beta-propiolactone or acrylic acid followed by esterification first with ethylene glycol and finally fumaric acid. This polyester is then copolymerized with styrene.

Reference: Gum Rosin Modified with beta-Propiolactone in Unsaturated Polyesters Halbrook, N.J.; Lawrence, R. V.; Dalluge, M.D.; and Stein, G.A. I&EC Prod. Research & Develop. 2, 182-185 (1963)

Additional information, reprints, and limited samples may be obtained from:

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